What is claimed is:

1. A functional bead comprising a coating layer on the surface thereof and having nanoparticles present in the coating layer.

2. The functional bead according to claim 1, wherein the bead is a bead made of a material selected from the group consisting of glass, silica gel, polystyrene, polypropylene, membrane, and magnetic material.

3. The functional bead according to claim 1, wherein the coating layer is produced by a dehydration condensation reaction of a metal alkoxide.

4. The functional bead according to claim 1, wherein the bead is plastic and the coating layer is produced by polymerizing a vinyl compound.

5. The functional bead according to claim 1, wherein the nanoparticle is a nanoparticle made of at least one material selected from the group consisting of metal, semiconductor, and metal compound.

6. A method for reading beads comprising the steps of:

introducing functional beads having a coating layer on the surface thereof and having nanoparticles present in the coating layer to a flow path;

enabling the functional beads to emit light with a wavelength specific to the nanoparticles by applying a voltage to the functional beads in the flow path; and

identifying the functional beads based on the emission.

7. A bead reading apparatus comprising:

a flow path to enable functional beads having a coating layer on the surface thereof and having nanoparticles present in the coating layer to pass therethrough;

a pair of electrodes provided in the midst of the flow path;

a power source to apply a voltage to the electrodes; and

a light-receiving element to capture light emitted from the functional beads, to which the voltage has been applied by the electrodes.

8. The bead-reading apparatus according to claim 7, comprising a magnetic belt for passing the functional beads through the flow path by magnetic force.

9. A method for reading beads comprising the steps of:

introducing functional beads having a coating layer on the surface thereof and having nanoparticles present in the coating layer to a flow path;

enabling the functional beads to emit light with a wavelength specific to the nanoparticles by irradiating the functional beads with an electromagnetic wave in the flow path; and

identifying the functional beads based on the emission.

10. A bead-reading apparatus comprising:

a flow path to enable functional beads having a coating layer on the surface thereof and having nanoparticles present in the coating layer to pass therethrough;

an electromagnetic wave source provided in the midst of the flow path; and

a light-receiving element to capture light emitted from the functional beads, which have been irradiated with the electromagnetic wave.

11. The bead-reading apparatus according to claim 9, comprising a magnetic belt for passing the functional beads through the flow path by magnetic force.

12. A functional bead comprising a coating layer on the surface thereof and having nanoparticles present in the coating layer, wherein a biopolymer is fixed on the surface of the functional bead.

13. A method for reading functional beads comprising the steps of:

causing a specific reaction between a biopolymer of claim 11 and other

biopolymer in the presence of the functional beads of claim 12; and

identifying the functional beads based on the specific reaction.

14. The functional bead-reading method according to claim 13, wherein the specific reaction is a hybridization reaction, a nucleic acid amplification reaction, or an antigen-antibody reaction.

15. A flow cytometer comprising a bead-reading apparatus according to claim 7.

16. A flow cytometer comprising a bead-reading apparatus according to claim 10.